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Telecommunications Consulting Engineers

ENGINEERING TECHNICAL STATEMENT PREPARED BY WILLIAM T. GODFREY, JR. OF THE FIRM KESSLER AND GEHMAN ASSOCIATES, INC., TELECOMMUNICATIONS CONSULTING ENGINEERS IN CONNECTION WITH FILING COMMENTS ON THE PROCEDURES AND RULE CHANGES ADOPTED IN THE THIRD PERIODIC REVIEW OF THE COMMISSION'S RULES AND POLICIES AFFECTING THE CONVERSION TO DIGITAL TELEVISION WITH RESPECT TO THE UNIVERSITY OF HOUSTON SYSTEM (UHS) POST-TRANSITION DIGITAL BROADCAST FACILITY, KUHT-DT CHANNEL *8, HOUSTON, TEXAS.

The firm Kessler and Gehman Associates, Inc. has been retained by the University of Houston System (UHS), Houston, Texas, licensee of analog broadcast facility KUHT-TV Channel *8 and digital station KUHT-DT Channel *9, to prepare an engineering analysis with respect to the Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television (Third DTV Periodic NPRM).

Discussion

As stated in the Third DTV Periodic NPRM, the purpose of this periodic review is to assess the progress of the transition and make any necessary adjustments to the Commission's rules and policies to facilitate the introduction of DTV service. The Third DTV Periodic NPRM states that the DTV Table is based on the Tentative Channel Designations (TCD) announced for stations, as well as the Commission's efforts to promote overall spectrum efficiency and ensure that broadcasters provide the best possible service to the public, including service to local communities. The purpose of this engineering statement is to respectfully bring to the Commission's attention that the KUHT-DT Channel *8 facility, as depicted in the Final DTV Table of Allotments (TOA), will fall well short of replicating its pre-transition DTV facilities, but that this situation can be corrected if KUHT-DT is permitted to use the existing antenna now in use for both KUHT(TV) on Channel *8 and KUHT-DT on Channel *9.



KUHT-TV is licensed to operate on Channel *8 using a directional antenna. UHS is repatriating back to Channel *8 as authorized in the final DTV TOA for its post-transition DTV operation and it intends to use the existing Channel *8 directional, top-mount antenna that has been in place for years. UHS filed comments in January 2007 notifying the Commission that the proposed DTV TOA, as depicted in the Seventh Further Notice of Proposed Rule Making, contemplated an unnecessarily low power level and specified an incorrect antenna ID. The Final DTV TOA, as adopted in the Seventh Report and Order and Eighth Further Notice of Proposed Rule Making (8th FNPRM), now specifies an increased power level for KUHT-DT of 21.9 kW. However, the Commission did not correct the antenna ID. In most cases, the Commission explained in the 8th FNPRM why stations received or did not receive changes to station parameters in the Final DTV TOA; however, the Commission did not make any reference to KUHT with respect to the antenna pattern. UHS is pleased that the Commission did change the ERP from 8.4 kW in the proposed DTV TOA to 21.9 kW in the final DTV TOA; however, because the antenna pattern was not changed to match the Channel 8 azimuth pattern, UHS will be forced to acquire and install at great expense a new antenna, and reduce ERP well below the specified 21.9 kW if it has to use the antenna specified in the Final DTV TOA.

The FCC stated in its 8th FNPRM (Para. 26) that when proposed changes to the DTV Table and/or Appendix B are consistent and do not create new post-transition interference to a TCD of more than 0.1%, the request is granted. The Commission also stated in paragraph 35 that it asked licensees to review the accuracy of their information contained in the proposed DTV Table Appendix B and comment on any inaccuracies or discrepancies in this information. UHS did just as the FCC requested and filed comments in January 2007 based on, inter alia, an incorrect antenna ID specified in the proposed DTV TOA. UHS filed detailed information demonstrating that the antenna ID did not match its licensed DTV or NTSC pattern which is critical since KUHT operates with a dual-channel antenna for its licensed NTSC *8 and DTV *9 operation that will be used for its post-transition digital operation on Channel *8. UHS also filed a Longley-Rice interference study supporting its January 2007 comments demonstrating that the post-transition KUHT-DT Channel *8 facility with an ERP of approximately 21.9 kW using



antenna ID 18548 (licensed pattern) would not cause more than 0.1% additional interference to any post-transition DTV station. Accordingly, based on the Commission's comments in Para. 26 of the 8th FNPRM, the antenna ID should have been changed to ID No. 18548 as requested. The antenna ID change would be consistent since UHS is clearly requesting nothing more than it already has and is licensed to operate with and the antenna change is compliant since it would meet the 0.1% additional interference threshold requirement with an ERP of 21.9 kW using antenna ID 18548.

The antenna issue goes back many years and wasn't actually corrected until 2004 when the Commission established the "CDBS Clean-up" in preparation for the channel election process for future post-transition digital channels. UHS submitted documentation to the FCC staff via e-mail demonstrating that the FCC had the incorrect antenna azimuth pattern in its Consolidated Data Base System (CDBS). The FCC recognized the error and updated the CDBS with the correct antenna azimuth pattern. When UHS subsequently filed its certification application and elected "replication," it understandably assumed that the FCC would use the correct antenna azimuth pattern since within just a matter of days prior to filing the certification application; the FCC corrected the antenna azimuth pattern in its CDBS.

Again, the FCC stated in Para. 38 of the 8th FNPRM that it would permit stations to file comments proposing to modify their certified facilities to match their authorized or constructed facilities and that the changes to the facilities would be reflected on the DTV Table Appendix B as long as the 0.1% additional interference requirement is met. UHS demonstrated in its January 2007 comments and again herein that changing the antenna ID to No. 18548 would match its constructed facility and would not violate the 0.1% additional interference criteria. It should also be recognized that changing the antenna ID would eliminate the financial burden of having to purchase a new antenna and it would benefit the public by continuing to serve the diverse population that has enjoyed the KUHT programming for many years.



Exhibit 1 depicts the post-transition antenna azimuth pattern as specified in the Final DTV TOA (Antenna ID: 80228) and the Exhibit 2 depicts the licensed KUHT-TV Channel *8, licensed KUHT-DT Channel *9, and proposed post-transition KUHT-DT Channel *8 antenna azimuth pattern (Antenna ID: 18548). The azimuth pattern assigned in the Final DTV TOA and the licensed pattern used by KUHT-TV/DT and proposed for the post-transition facility are both directional cardioid patterns; however, the patterns are not identical. Exhibit 3 is a contour comparison map depicting the following: 1) KUHT-DT Channel *8 F(50,90) 36.0 dBuV/m protected noise limited contour (red) as specified in the Final DTV TOA; 2) proposed KUHT-DT Channel *8 F(50,90) 36.0 dBuV/m protected noise limited contour (magenta) using the licensed KUHT analog/digital dual channel antenna azimuth pattern; and 3) licensed KUHT-TV Channel *8 F(50,50) 56.0 dBuV/m protected Grade B contour (dashed black). Referring to Exhibit 3, it can be seen that proposed KUHT-DT Channel *8 facility using the existing antenna and 21.9 kW ERP (magenta contour) would come much closer to replication (dashed black) than the KUHT-DT Channel *8 post-transition facility as specified in the Final DTV TOA (red). In fact, the area that the KUHT-DT Channel *8 Final DTV TOA F(50,90) 36.0 dBuV/m noise limited contour (red) would exceed the proposed noise limited contour (magenta) is 448.25 sq. km while the area that the proposed noise limited contour (magenta) would exceed the Final DTV TOA noise limited contour (red) is only 360.52 sq km (see Exhibit 3). Therefore, UHS's request to have the antenna ID changed would actually reduce the size of its overall coverage contour by 87.73 sq. km which further confirms that UHS is not asking for more than it is currently authorized and is simply requesting an antenna ID change so that it can replicate and continue to serve the population it has served for so many years.

Paragraph 93 of the Third DTV Periodic NPRM states that the Commission is seeking input from any stations that may be unable to build precisely the facilities specified in the new DTV Table Appendix B. The Commission goes on to ask if such stations are prohibited from expanding beyond their DTV Table Appendix B facilities will they instead be required to reduce their facilities so significantly that they will be unable to provide adequate service? It also asked for comments on whether the FCC should allow stations that fall into this situation to expand beyond their DTV



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Table Appendix B facilities to the extent necessary to address the difference between the theoretical facilities specified in the new DTV Table Appendix B and the actual facilities which they are able to build? In response, UHS respectfully requests that stations be permitted to expand beyond their DTV Table Appendix B facilities when minor changes to antenna patterns are required to permit the station to replicate its current DTV facilities. In the case for UHS, the public interest would clearly be served by changing the antenna ID from No. 80228 to No. 18548.

Certification

This technical statement was prepared by William T. Godfrey, Telecommunications Consultant with Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida and has been working in the field of radio and television broadcast consulting since 1998. He graduated from the University of North Florida with a Bachelor of Arts degree in Criminal Justice and a minor in Mathematics in 1993. As a Professional in the field of Telecommunications he states under penalty of perjury that the information contained in this report is true and correct to the best of his knowledge and belief.



KESSLER AND GEHMAN ASSOCIATES, INC.

A handwritten signature in blue ink that reads 'William T. Godfrey, Jr.' The signature is written over a horizontal line.

WILLIAM T. GODFREY, JR.

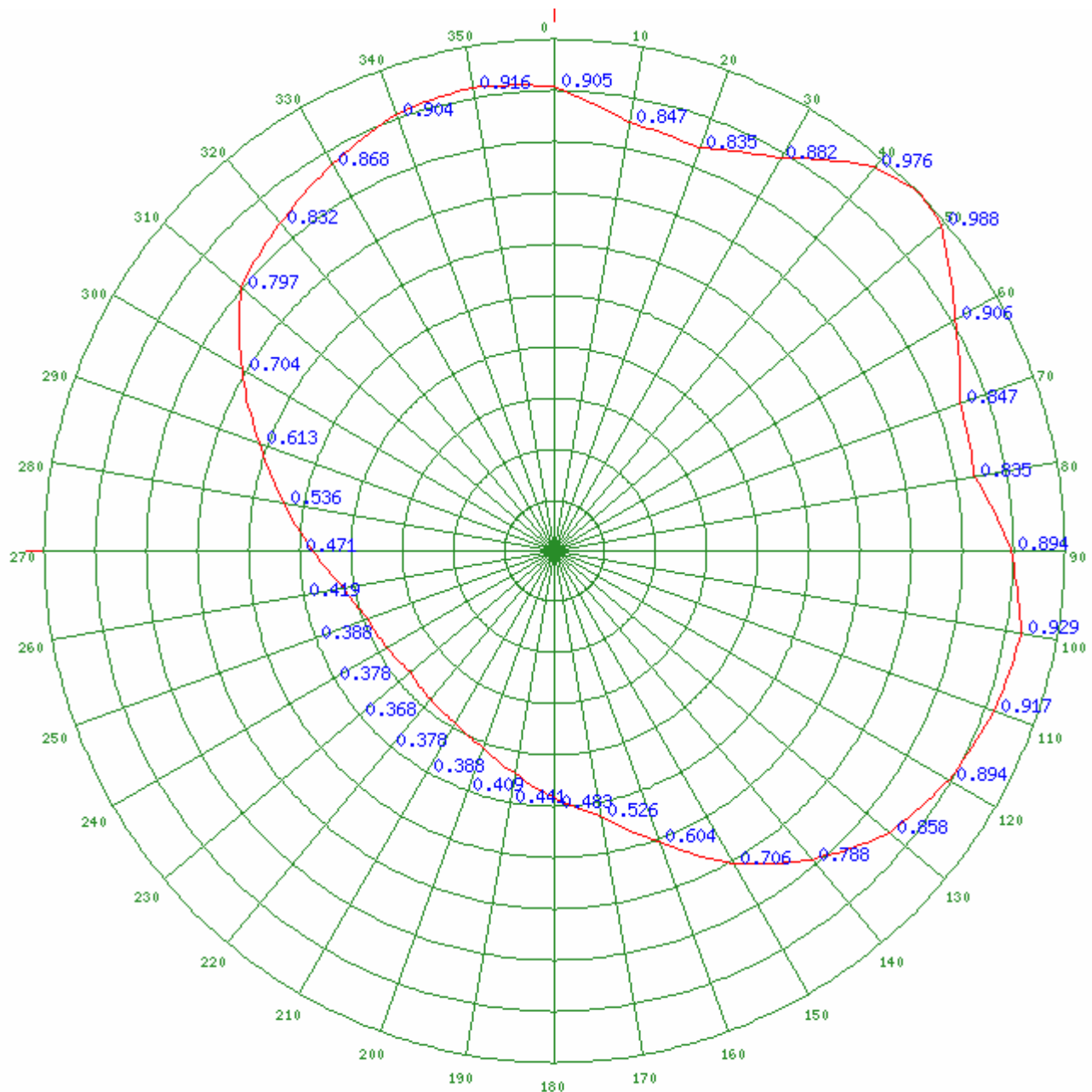
Telecommunications Technical Consultant

15 August, 2007

KUHT-DT Channel *8 Final DTV TOA Azimuth Pattern & Tabulation

Antenna Make	Model				Service	Antenna Id	
N08	TXHOUSTON__08				DT	80228	
Antenna relative field values:							
0° 0.905	10° 0.847	20° 0.835	30° 0.882	40° 0.976	50° 0.988		
60° 0.906	70° 0.847	80° 0.835	90° 0.894	100° 0.929	110° 0.917		
120° 0.894	130° 0.858	140° 0.788	150° 0.706	160° 0.604	170° 0.526		
180° 0.483	190° 0.441	200° 0.409	210° 0.388	220° 0.378	230° 0.368		
240° 0.378	250° 0.388	260° 0.419	270° 0.471	280° 0.536	290° 0.613		
300° 0.704	310° 0.797	320° 0.832	330° 0.868	340° 0.904	350° 0.916		
Additional Azimuths:							
46° 1							

Relative Field Polar Plot



KUHT-DT Channel *8 Proposed Azimuth Pattern & Tabulation

Antenna Make	Model	Service	Antenna Id
CET	JRP 8/3.9	TV	18548

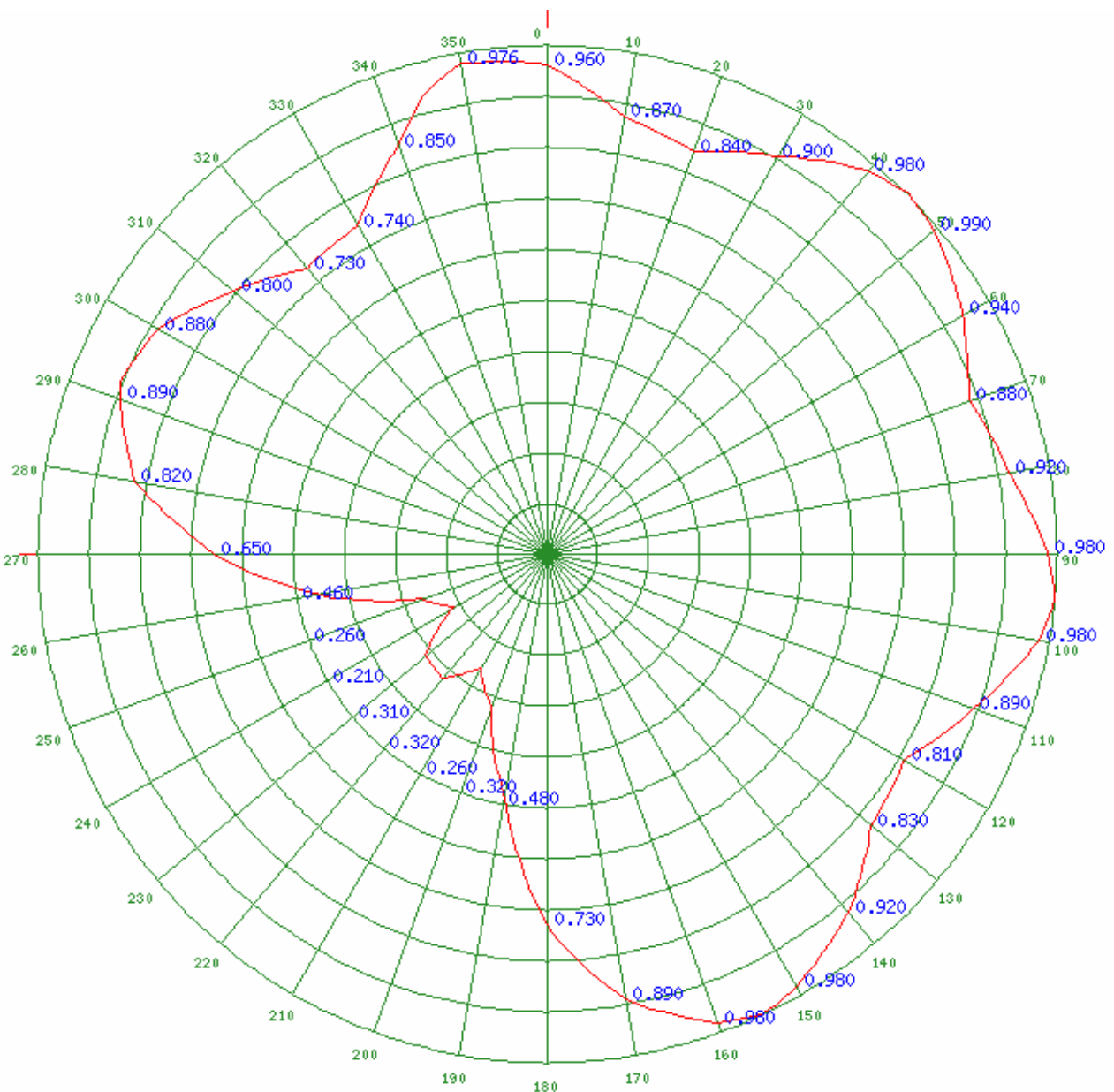
Antenna relative field values:

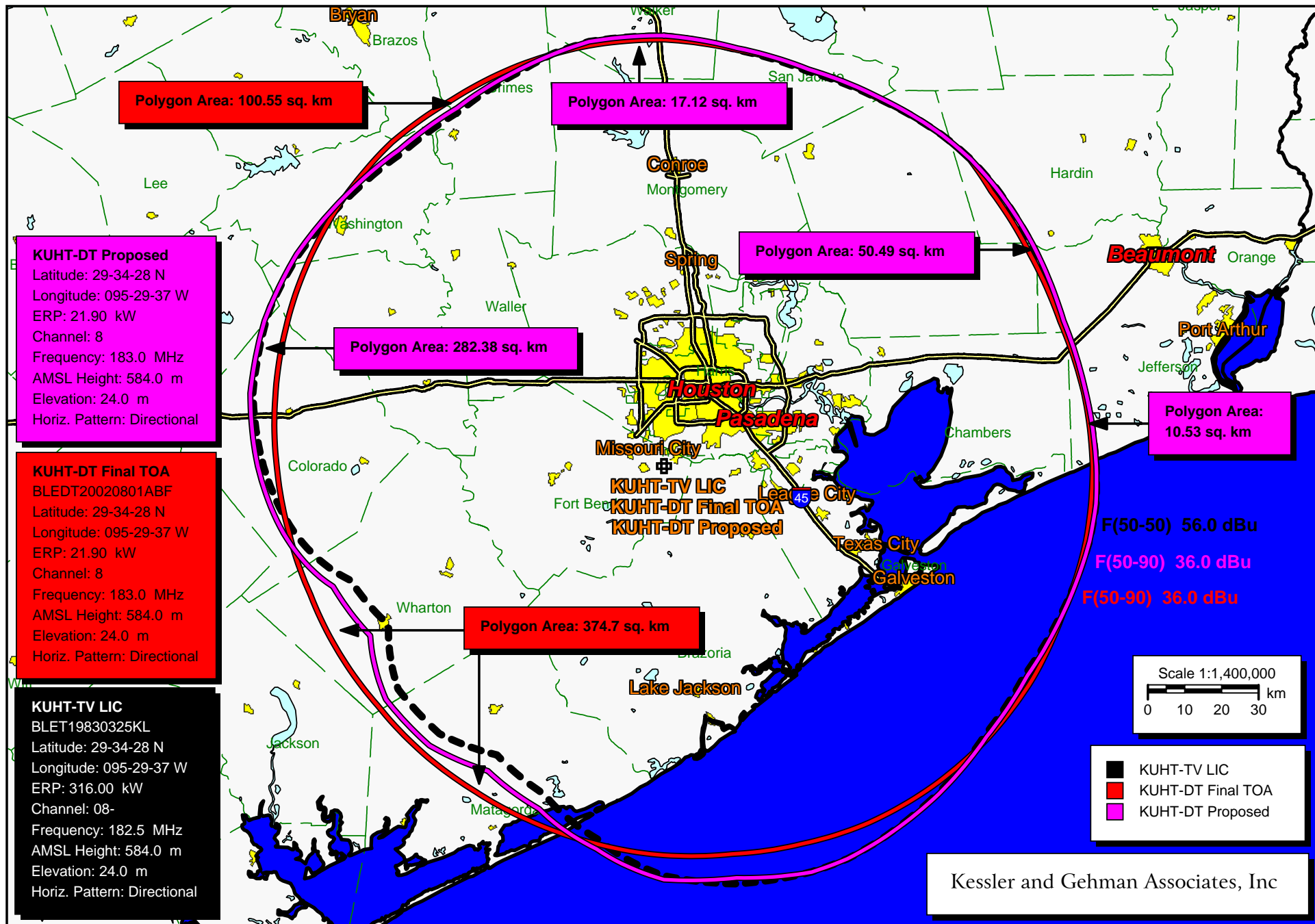
0° 0.96	10° 0.87	20° 0.84	30° 0.9	40° 0.98	50° 0.99
60° 0.94	70° 0.88	80° 0.92	90° 0.98	100° 0.98	110° 0.89
120° 0.81	130° 0.83	140° 0.92	150° 0.98	160° 0.98	170° 0.89
180° 0.73	190° 0.48	200° 0.32	210° 0.26	220° 0.32	230° 0.31
240° 0.21	250° 0.26	260° 0.46	270° 0.65	280° 0.82	290° 0.89
300° 0.88	310° 0.8	320° 0.73	330° 0.74	340° 0.85	350° 0.976

Additional Azimuths:

95° 1	345° 0.93	45° 1	155° 1	292° 0.9	
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Relative Field Polar Plot





KUHT-TV LIC, KUHT-DT Final DTV TOA & KUHT-DT (Proposed) Service Contours